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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,691

05/22/2007

Frank Henglein

P/746-7

9420

2352 7590 09/24/2010  
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EXAMINER

SHEH, ANTHONY H

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

09/24/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,691	<b>Applicant(s)</b> HENGLEIN ET AL.	
	<b>Examiner</b> ANTHONY H. SHEH	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 10-46 and 48-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-46 and 48-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                     |                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                         | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. This Office action follows a response filed 20 January 2010. Claims 1 and 10 were amended. Claims 8, 9 and 47 are cancelled. Claims 1-7, 10-46 and 48-54 are pending.
2. Claim 1 was amended to further limit metallic pigment to those pigments produced by milling and primed, before being coated, with a silicon dioxide barrier layer. Applicant states that support for milling may be found in the Examples and Figures of the original disclosure. The silicon dioxide barrier layer finds support in cancelled claim 9. However, the scope of said barrier layer has been much narrowed from a genus of metal oxides and organophosphoric compounds. Accordingly, the amendments alter the scope of the claims in a manner previously not presented.
3. Examiner has considered Applicant's arguments and amendments, and has found them unpersuasive. The new grounds of rejection set forth below address the new limitations of instant claim 1. Accordingly, this action is made FINAL.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claims 1-7, 10-46 and 48-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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6. Applicant relies on disclosed embodiments of the claimed invention to support the recitation "wherein the metallic pigments are produced by milling." Applicant asserts that milling "would be immediately apparent to one of ordinary skill in the art from the product name of the pigments used in the subject examples." (see page 12 of Remarks filed 20 January 2010).

Applicant also points to Figures 1 and 2 as evidence that the pigments are milled (due to the lack of straight edges).

7. The foregoing amendment narrows the scope of claim 1, and attempts to differentiate the claim via product-by-process limitations. The previous claim was open to metallic pigments produced via any method. "While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure." See MPEP § 2163. No express disclosure of milling can be found in the instant specification. Since not all metallic pigments are produced via milling, there is no inherent disclosure. There cannot be implicit disclosure because no part of the instant invention requires that the metallic pigment be milled (save for the newly filed limitation). Even assuming *arguendo* that the disclosed product names and figures correspond to milled pigments and only milled pigments, it is not reasonable for one of ordinary skill in the art at the time of the instant invention to limit the disclosure to milled pigments. Therefore, the new limitation is not supported by the original disclosure and constitutes new matter.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. The cited claim is dependent on cancelled claim 8. Since claim 8 is cancelled, there is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 4, 6, 7, 17, 22, 23, 26, 28, 29, 33, 43-35, 52 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by GREIWE et al., WO 99/57204 (hereafter '204, for which Examiner has adopted US 6,761,762 B1 (hereafter '762) as an English-language equivalent).

12. Regarding claim 1, '762 discloses effect pigments coated with a surface-modifying agent, or "bonding agent" (Abstract; col. 3, ln. 9-11). Said agent contains one moiety which reacts with the surface of the effect pigment, and another moiety which chemically reacts in a cross-linking mechanism to an "ambient medium" (col. 3, ln. 9-29). The cross-linking occurs under heating ("baked" - col. 3, ln. 25-28; Example 1). The foregoing moieties are connected by a spacer which is polymeric in nature ("alkyl chains, siloxanes, polyethers" - col. 3, ln. 17-25). The pigment itself is metallic, and may be coated with SiO<sub>2</sub> (col. 3, ln. 1-4). An embodiment of the effect pigment is PCR 8154, which suitably indicates an aluminum pigment produced by milling having an SiO<sub>2</sub> coating (col. 7, ln. 3-5). The particles size ranges from 1 to 200 microns; the median diameter must be less than 200 microns.

13. Regarding claims 4, 6 and 7, the bonding/surface-modifying agent is produced directly on the effect pigment via chemical reaction from suitable reactants (col. 3, ln. 41-60). The

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reactants include the bonding agent, an initiator (radical forming agent, acids, bases, etc.), and a cross-linking agent which partially reacts with said bonding agent.

14. Regarding claim 17, curing/cross-linking of the '762 bonding/surface-modifying agent is accomplished via heating (col. 3, ln. 25-29).

15. Regarding claim 22, the coated effect pigment is derived from metallic pigments including aluminum, copper, zinc, gold-bronze etc. (col. 2, ln. 59-63).

16. Regarding claim 23, in one embodiment (Example 5 - col. 7, ln. 65-67), the prior effect pigment is oxidized aluminum.

17. Regarding claims 26 and 52, the coated effect pigments may be formed as a paste comprising a solvent in which the coated effect pigments are formed (col. 3, ln. 61-63). The solvent is organic (col. 3, ln. 40-63).

18. Regarding claims 28, 29 and 53, the '762 coated effect pigments form coatings, via a curing process ("hardening" - col. 3, ln. 24) in which "good adhesion... is maintained even under the action of aggressive and corrosive media" (col. 5, ln. 42-43). Therefore, the prior art coating is resistant to corrosion after curing. The coating is applied to objects including sheets (col. 7, ln. 30-47).

19. Regarding claim 33, 43-45, the coated effect pigments are incorporated into an aqueous lacquer and then coated on a sheet (col. 2, ln. 22-30; col. 7, ln. 30-47). The terms "lacquer" and "varnish" are substantially coextensive. The pigments are also designed for use in "aqueous paints and lacquers and printing inks" (col. 5, ln. 36-48). To the extent that a nail varnish may be construed as a varnish for nails, such is met by the lacquer of '762.

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***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

23. Claims 2 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over GREIWE et al., WO 99/57204 (hereafter '204, for which Examiner has adopted US 6,761,762 B1 (hereafter '762) as an English-language equivalent).

24. The discussion of '204 (and equivalent '762) in paragraphs 11-20 *supra* is incorporated herein by reference.

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25. Regarding claim 2, the particle size of the '762 metal effect pigments is between 1 and 200 microns. Necessarily, the median particle size must also fall within this range, which overlaps that of instant claim 2.

26. Regarding claim 34, the field of endeavor with which '762 is concerned is that of metallic paints for automobiles (col. 1, ln. 32-44). Though the reference does not expressly disclose coating on *inter alia* vehicle panels, to the extent that said pigments are exposed to weathering and are designed for aesthetic value (col. 23-26), it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the coated effect pigments of '762 in lacquers to paint the exterior of automobiles, i.e. vehicle body panels.

27. Claims 1-7, 11, 14, 17, 22, 26-38, 40, 41, 43, 44, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAMELON et al., US 3,932,347 (hereafter '347), in view of SCHMID et al., US 5,505,991 (hereafter '991).

28. The discussion of '347 in the previous Office action mailed 21 August 2009 is incorporated herein by reference.

29. Regarding claim 1, the '347 aluminum paste is aluminum flakes in which a small amount of lubricant is added during the milling operation. Therefore, the prior art is directed to pigments which are produced via milling. However, the reference does not disclose metallic pigments primed with a layer of silicon dioxide.

30. '991 discloses a process for coating solid particles with silicon oxide. In the context of the reference, silicon oxide indicates silicon dioxide (Table). The reference discloses that silicon oxide coatings "are of interest for many sectors... since silicon oxide layers in combination with metallic layers create... very strong, attractive interference colors" (col. 1, ln. 24-28). The



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reference is particularly interested in "aluminum flakes which are produced in a simple manner... by widely used atomization and grinding techniques" (col. 4, ln. 6-8), i.e. milling.

31. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to "prime" or coat the aluminum flake pigment of '347 with a layer of silicon dioxide to improve its aesthetic appeal via creation of a strong attractive interference color.

32. Claims 10, 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAMELON et al., US 3,932,347 (hereafter '347), in view of SCHMID et al., US 5,505,991 (hereafter '991), in further view of REISSER et al., US 5,332,767 (hereafter '767)

33. The discussion of '347 and '991 in paragraphs 27-31 *supra* is incorporated herein by reference. Neither of the foregoing prior art documents discusses priming with adhesion promoters.

34. '767 discloses priming of aluminum-based metal pigments (col. 1, ln. 27; col. 3, ln. 8-31) is treated with a functionalized silane (col. 4, ln. 9-20) and organic phosphoric acids (col. 3, ln. 43-45). Said priming results in a bonding effect between the surface of the pigment and a synthetic resin coating (col. 2, ln. 58-63). The references also discloses the utility of phosphates and organic phosphoric acid esters as corrosion inhibitors for aluminum-based metal pigments (col. 1, ln. 25-38).

35. Therefore, it would have been obvious to apply the treatment of '767 to the aluminum pigments of '347 and/or '991 so as to improve its adhesion to the '347 coating material.

36. Claims 12-14, 16, 18-21, 39, 50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAMELON et al., US 3,932,347 (hereafter '347), in view of SCHMID et al.,

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US 5,505,991 (hereafter '991), in further view of ROBINSON et al., WO 00/22053 (hereafter '053), as evidenced by ARALDITE® GT 6063 Product Specification.

37. The discussion of '347 and '991 in paragraphs 27-31 *supra* is incorporated herein by reference. '053 was discussed in paragraphs 28-33 of the previous Office action mailed 21 August 2009, incorporated herein by reference. As before, while '347 contemplates a variety of film-forming binders, it does not specify the particulars of said binders. Nor does '347 discussion anticorrosion agents.

38. Regarding claims 12-14, 16 and 50, '053 further discloses as binders of the powder coating composition, carboxy-functional polyester resins, hydroxyl-functional polyester resins, epoxy resins, and functional acrylic resins (p. 11-12). The carboxy-functional polyester resin has acid number between 10 and 100 (p. 11), and may be used in a conjunction with a curing/crosslinking agent such as triglycidyl isocyanurate (p. 12). As epoxy resin, an embodiment of which is ARALDITE® GT 6063 having an epoxy equivalent weight between 640-730 (Example 4 - p. 22, 23); epoxy resins can be cured using an amine-functional curing agent e.g. dicyandiamide (p. 12). The reference teaches polyurethanes; a hydroxy-functional polyester combined with a blocked isocyanate-functional resin (p. 12-13).

39. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize as the thermosetting film-forming binder of '347, the binders of '053; '347 suggests the use of organic, thermosetting film-forming materials which are self-crosslinkable or chemically-functional polymers with crosslinking agent (col. 3, ln. 38-41) to coat metal particle pigments, and '053 teaches specific embodiments thereof.

40. Regarding claims 18-21, 39 and 54, '053 discloses a powder coating composition (Abstract) which comprising a stabilizing additive (p. 2) and metallic pigments, e.g. aluminum flake pigment (p. 2). The stabilizing additives may added at any time during a homogenization

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process of the powder coating composition (p. 9), which includes a film-forming binder (p. 11), or to pre-treat said particles with the additive (p. 4). The stabilizing additives are anticorrosion agents (p. 2), having particle size between 0.1 and 10 microns (p. 10, 11), embodied by strontium aluminum polyphosphate hydrates, zinc phosphate, organophosphonates, and zinc molybdates (p. 6-8).

41. Therefore it would have been obvious to one of ordinary skill in the art at the time of the instant invention to include in the binder of '347, the anticorrosion agents of '053 to prevent weathering of the metallic pigments due to oxygen and water. Furthermore, the reference discloses that the anticorrosion agents can be added without restriction to a homogenization process. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to add said agents to either (1) the metal pigment powder component, or (2) the non-metal powder component of the '347 method, or to (3) pre-treat the '347 metal particles as instructed by '053 to achieve anticorrosive properties. It is noted that any order of mixing ingredients is *prima facie* obvious. *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930), see MPEP § 2144.04.

42. Claims 15 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAMELON et al., US 3,932,347 (hereafter '347), in view of SCHMID et al., US 5,505,991 (hereafter '991), in further view of BAYARDS et al., US 6,291,581 (hereafter '581).

43. The basis for this rejection is adequately set forth in paragraphs 27-31 *supra*, and paragraphs 34-37 of the previous Office action mailed 21 August 2009.

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44. Claims 23, 24 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAMELON et al., US 3,932,347 (hereafter '347), in view of SCHMID et al., US 5,505,991 (hereafter '991), in further view of REISSER et al., US 5,964,936 (hereafter '936).

45. The basis for this rejection is adequately set forth in paragraphs 27-31 *supra*, and paragraphs 38-41 of the previous Office action mailed 21 August 2009.

46. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over CAMELON et al., US 3,932,347 (hereafter '347), in view of SCHMID et al., US 5,505,991 (hereafter '991), in further view of MORGAN et al., US 5,319,001 (hereafter '001).

47. The basis for this rejection is adequately set forth in paragraphs 27-31 *supra*, and paragraphs 42-45 of the previous Office action mailed 21 August 2009.

### ***Response to Arguments***

48. Applicant's arguments filed 20 January 2010 have been fully considered but they are not persuasive.

49. With respect to CAMELON et al., US 3,932,347 (hereafter '347), the aluminum flake pigment of '347 is derived by milling. Coating with silica is known in the art as both a method to create attractive interference pigments, as taught by SCHMID et al., US 5,505,991 (hereafter '991), and to impart greater chemical resistance and durability via ROBINSON et al., WO 00/22053 (hereafter '053) ('053: p. 3, ln. 31-36). Accordingly, the argument that a priming with a silicon dioxide barrier is patentable over '347 is not persuasive. Since, all of Applicant's arguments hinge upon the inventive nature of silicon dioxide coating, said arguments are not persuasive in light of the prior art.

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50. With respect to the double patenting rejections over KAUPP et al., US 6,287,695 (hereafter '695), since the patent is drawn to PVD pigments to the exclusion of milled pigments, this rejection has been vacated.

### ***Conclusion***

51. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

52. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

53. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY H. SHEH whose telephone number is (571) 270-7746. The examiner can normally be reached on Mondays through Thursdays, 9:30A-3:30P.

54. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VASUDEVAN S. JAGANNATHAN can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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55. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANTHONY H SHEH/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796